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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/612,176	07/08/2000	Thomas L. Ritzdorf	291958117US	7779

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EXAMINER
SMITH, ZANDRA V

ART UNIT	PAPER NUMBER
2877	

DATE MAILED: 07/17/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/612,176	RITZDORF ET AL.	
	Examiner	Art Unit	
	Zandra V. Smith	2877	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *21 April 2003* .

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *2,3,5,6,12-16,20,23-26 and 31-47* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *2,3,5,6,12,20,23-26 and 47* is/are allowed.

6)☒ Claim(s) *13,15,16,31,33,34,37-40,42,43 and 46* is/are rejected.

7)☒ Claim(s) *14,32,35,36,41,44 and 45* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) do not apply to the examination of this application as the application being examined was not (1) filed on or after November 29, 2000, or (2) voluntarily published under 35 U.S.C. 122(b). Therefore, this application is examined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

Claims 13 and 15-16 are rejected under 35 U.S.C. 102(e) as being anticipated by ***Akimoto et al. (6,004,047)***.

As to **claim 13,** Akimoto discloses a photoresist processing system, comprising:

an in-line metrology unit having a space for receiving a work-piece for measuring a condition of a first layer of the work-piece and generating a condition signal;

a control connected to the metrology unit;

multiple process units providing space to receive the work-piece and perform material application processes, wherein a condition signal from the metrology unit influences process conditions (col. 6, lines 1-20 and col. 7, line 58-col. 8, line 10); and

a transport unit to receive the work piece from one of the process units and the metrology unit and move the work piece to another process unit (col. 6, lines 30-42 and col. 8, lines 15-20).

As to **claims 15-16,** Akimoto discloses everything claimed, as applied above, in addition the work pieces are processed in one processing tool and then other processing tools.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 31, 33-34, 37-40, 42-43, and 46 are rejected under 35 U.S.C. 102(b) as being anticipated by ***Moslehi (5,719,495)***.

As to **claim 31,** Moslehi discloses an apparatus for semiconductor device fabrication diagnosis and prognosis, comprising:

a metrology unit (112) to measure a condition of at least one conductive layer (col. 5, line 59) and generate a condition signal (col. 6, lines 55-60, col. 8, line 5, and col. 9, lines 15-25);

an electrochemical processing unit to apply a conductive material to the conductive layer (col. 5, lines 55-65); and

a control unit coupled between the metrology unit and the processing unit to receive the condition signal from the metrology unit and transmit a control signal, the control signal influencing the manner in which the conduction material is applied to the conductive layer (col. 4, lines 24-29, col. 7, lines 51-60, and col. 8, lines 10-15).

As to **claims 33 and 42,** Moslehi discloses everything claimed, as applied above, in addition a material deposition unit is provided (col. 8, lines 55-65 and col. 9, lines 15-25).

As to **claims 34 and 43,** Moslehi discloses everything claimed, as applied above, in addition the metrology unit detects a condition of the conductive layer (col. 8, lines 55-65 and fig. 4).

As to **claims 37-38 and 46** Moslehi discloses everything claimed, as applied above, in addition the metrology unit and the processing unit are housed separately and are virtually coupled (see fig. 4).

As to **claim 39,** Moslehi discloses everything claimed, as applied above, in addition the control signal influences a uniformity with which the conductive material is applied (col. 4, lines 24-29, col. 7, lines 51-60, and col. 8, lines 10-15).

As to **claim 40,** Moslehi discloses an apparatus for semiconductor device fabrication diagnosis and prognosis, comprising:

a metrology unit (112) to measure a condition of at least one conductive layer (col. 5, line 59) and generate a condition signal (col. 6, lines 55-60, col. 8, line 5, and col. 9, lines 15-25);

a processing unit to apply a conductive material to the conductive layer, the process including an enhancement process (col. 4, lines 23-30 and col. 5, lines 55-65); and

a control unit coupled between the metrology unit and the processing unit to receive the condition signal from the metrology unit and transmit a control signal, the control signal influencing the manner in which the conduction material is applied to the conductive layer (col. 4, lines 24-29, col. 7, lines 51-60, and col. 8, lines 10-15).

Allowable Subject Matter

Claims 2-3, 5-6, 12, 20, 23-26, and 47 are allowable over the prior art of record.

Claims 14, 32, 35-36, 41, and 44-45 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: the prior art of record, taken alone or in combination, fails to disclose or render a seed layer enhancement unit, an electroplating reactor, movement of the wafer to a non-compliance unit in response to a signal from a metrology unit, use of a condition signal to adjust the current between the anode and cathode or determining seed layer thickness.

Response to Arguments

Applicant's arguments filed 21 April 2003 have been fully considered but they are not persuasive. Applicant's representative argues that Akimoto does not meet the limitation of claim 13 because Akimoto measures the thickness of the film on the surface of the wafer without taking the work-piece out of the processing system. Claim 13 requires at least two processing tools and movement of the wafer from one of the processing tool to a metrology unit to determine a condition of a layer on the work piece then modifying a process parameter in response to the signal from the metrology unit. Akimoto provides various processing unit (tools) (col. 5, line 68) in a process system to perform various processes on a work piece. The wafer is moved from one process unit to a metrology unit and in response to a signal from the metrology unit, a process parameter is modified (col. 6, lines 1-20 and col. 7, line 58-col. 8, line 10).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Zandra V. Smith whose telephone number is (703) 305-7776. The examiner can normally be reached on 8:00 a.m. - 4:30 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Frank G. Font can be reached on (703)308-4881. The fax phone numbers for the

organization where this application or proceeding is assigned are (703) 308-7722 for regular communications and (703) 308-7722 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-0580.

Zandra V. Smith
Primary Examiner
Art Unit 2877

July 11, 2003